

Customer No.: 31561
Application No.: 10/604,042
Docket No.: 9265-US-PA

Claim Amendment

Please amend the claims according to the following listing of claims and substitute it for all prior versions and listings of claims in the application.

Claims 1-12 (cancelled)

Claims 13-24 (cancelled)

25. (new) A three-dimensional memory structure, comprising:

a first stack line, having:

a first first-type polysilicon layer;

a second first-type polysilicon layer;

a first conductive layer between the first first-type polysilicon layer and the second first-type polysilicon layer; and

a first anti-fuse between the first first-type polysilicon layer and the second first-type polysilicon layer; and

a second stack line crossing over the first stacked line, having:

a first second-type polysilicon layer;

a second second-type polysilicon layer;

a second conductive layer between the first second-type polysilicon layer and the second second-type polysilicon layer; and

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a second anti-fuse between the first second-type polysilicon layer and the second second-type polysilicon layer.

26. (new) The memory structure of claim 25, wherein the first-type polysilicon layer comprises an n-type polysilicon layer.

27. (new) The memory structure of claim 26, wherein the second-type polysilicon layer comprises a p-type polysilicon layer.

28. (new) The memory structure of claim 25, wherein the first-type polysilicon layer comprises a p-type polysilicon layer.

29. (new) The memory structure of claim 28, wherein the second-type polysilicon layer comprises an n-type polysilicon layer.

30. (new) The memory structure of claim 25, wherein a material of the first anti-fuse and the second anti-fuse comprises oxide.

31. (new) The memory structure of claim 25, wherein a material of the first conductive layer comprises tungsten silicide.

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32. (new) The memory structure of claim 25, wherein a material of the second conductive layer comprises tungsten silicide.

33. (new) The memory structure of claim 25, wherein a material of the first conductive layer comprises titanium silicide.

34. (new) The memory structure of claim 25, wherein a material of the second conductive layer comprises titanium silicide.

35. (new) A three-dimensional memory structure, comprising:
a plurality of first stack lines, wherein each first stack line comprises:
an upper first-type polysilicon layer;
a lower first-type polysilicon layer;
a first conductive layer between the upper and the lower first-type polysilicon layers; and
a first anti-fuse between the upper first-type polysilicon layer and the lower first-type polysilicon layer;
a first dielectric layer in a space between the first stack lines;

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a plurality of second stack lines crossing over the plurality of the first stack lines, wherein a pattern of the upper first-type polysilicon layer is substantially conformal to a shape of an interaction between each second stack line and each first stack line, wherein each second stack line comprises:

an upper second-type polysilicon layer;
a lower second-type polysilicon layer;
a second conductive layer between the upper second-type polysilicon layer and the lower second-type polysilicon layer; and
a second anti-fuse between the upper second-type polysilicon layer and the lower second-type polysilicon layer; and
a second dielectric layer in a space between the second stack lines.

36. (new) The memory structure of claim 35, wherein the first anti-fuse comprises an oxide material.

37. (new) The memory structure of claim 35, wherein the second anti-fuse comprises an oxide material.

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38. (new) The memory structure of claim 35, wherein while the first-type polysilicon layer comprises a p-type polysilicon layer, the second-type polysilicon layer comprises an n-type polysilicon layer.

39. (new) The memory structure of claim 35, wherein while the first-type polysilicon layer comprises an n-type polysilicon layer, the second-type polysilicon layer comprises a p-type polysilicon layer.

40. (new) A three-dimensional memory structure, comprising:
a plurality of first stack lines, wherein each first stacked line comprises:
a first upper first-type polysilicon layer;
a first lower first-type polysilicon layer;
a first conductive layer between the upper and the lower first-type polysilicon layers; and
a first anti-fuse between the first upper first-type polysilicon layer and the first lower first-type polysilicon layer;
a first dielectric layer in a space between the first stack lines;
a plurality of second stack lines crossing over the plurality of the first stack lines,
wherein a pattern of the upper first-type polysilicon layer is substantially conformal to a

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shape of an interaction between each second stacked line and each first stacked line,

wherein each second stack line comprises:

an upper second-type polysilicon layer;

a lower second-type polysilicon layer;

a second conductive layer between the upper and the lower second-type polysilicon layers; and

a second anti-fuse between the upper and the lower second-type polysilicon layers;

a second dielectric layer in a space between the second stacked lines;

a plurality of third stacked lines crossing over the plurality of the second stacked lines, wherein a pattern of the upper second-type polysilicon layer is substantially conformal to a shape of an interaction between each third stack line and each first stack line, and wherein each third stack line comprises:

a second upper first-type polysilicon layer;

a second lower first-type polysilicon layer;

a third conductive layer between the second upper and the second lower first-type polysilicon layers; and

a third anti-fuse between the second upper first-type polysilicon layer and the second lower first-type polysilicon layer;

a third dielectric layer in a space between the third stacked lines; and

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at least a plug in the second dielectric layer connecting the first conductive layer and the second lower first-type polysilicon layer.

41. (new) The three-dimensional memory structure, wherein the plug comprises polysilicon plug.

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